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Patent Office

Ottawa, Canada
K1A 0C9

(21) (A1)

2,088,726

(22)

1993/02/03

(43)

1994/08/04

5,085,9/96

EPA - 92127

BEST AVAILABLE COPY

(51) INTL.CL.⁵ E06B-003/88; E06B-003/70

(19) (CA) APPLICATION FOR CANADIAN PATENT (12)

(54) Door Reinforcing Plate

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(57) 19 Claims

Notice: This application is as filed and may therefore contain an
incomplete specification.

Canada

CCA 3254 (10-92) 41 7530-21-936-3254

ABSTRACT

A door reinforcing plate is disclosed which comprises a thin elongate angled plate adapted to be secured by an adhesive in abutting relationship over a vertical edge of an existing wooden door. The reinforcing plate is made of a rectangular sheet of metal bent into a channel having a substantially U-shaped cross-section. A base portion of the channel which abuts the edge of the door is provided with at least one opening sized and positioned to permit the movement of the door-lock mechanism therethrough, enabling the normal operation of the door.

Scope of the Invention

This invention relates generally to a door reinforcing plate, and more particularly to a door reinforcing plate which is adapted to be secured over the locking edge of a wooden door to increase the door's ability to withstand an impact force.

Background of the Invention

It is known to reinforce a door to increase its ability to withstand the impact force of a person striking the door in an attempt to break it down. Typically, the door is reinforced by securing a small metal plate over a portion of the door's locking vertical edge and door lock mechanism. Known door reinforcing plates are usually made of a sheet steel bent into a U-shape. Installed, the known reinforcing plate abuts the door with each of side of the U-shaped plate extending approximately 20 cm in both the vertical and horizontal directions across the door front and rear faces. The central portion of the plate extends approximately 20 cm in the vertical direction and horizontal distance equal to the width of the edge surface of the door.

Known door reinforcing plates include openings adapted for placement over door knobs, lock tumblers, latches and deadbolts which make up the door lock mechanism.

Previously known door reinforcing plates have a major disadvantage in they are designed for use with interior doors only. The thickness of the metal used to form the plate prevents the door from closing flush against the lockside of the door jamb, thereby preventing a good seal and causing drafts between the door and the door jamb.

Accordingly, it is desirable to contour or remove portions of the door, such that when secured to the door the exposed surfaces of reinforcing plate are coplanar with adjacent surfaces of the door. With the reinforcing member coplanar with adjacent surfaces of the door, the door may be closed tight against a door jamb to thereby minimize drafts, causing heat loss in winter and cooling loss in summer. A disadvantage of known reinforcing plates is the degree which they horizontally or laterally extend across the front and rear faces of the door. As known door reinforcing plates typically extend 20 cm or more across the door faces, it is difficult to remove sufficient material from the door, to form contoured portions or indentations in the front and rear

faces, so as to permit recessed placement of the reinforcing plate in the door surfaces.

Additionally, previously known door reinforcing plates have a major disadvantage in that their size and the lateral extent to which they extend across the door faces makes them aesthetically unappealing, particularly when attached to ornate wooden doors.

Further, known door reinforcing plates are disadvantageous in that their size and metal construction requires that each part of the locking mechanism, i.e. the deadbolt, latch, lock tumbler and door knob be pre-located on the door in a precise configuration aligned with openings in the reinforcing plate. If the latch bolt, tumbler and door knob are not configured for exact alignment with the reinforcing plate it will not be possible to secure the plate to the door. Further, the metal construction of the plate typically results in that it is the door and lock mechanism which must be modified to fit the reinforcing plate and not vica versa. As it is frequently not possible to reconfigure the door locking mechanism without damaging the door, the openings makes known door reinforcing plates are impractical for custom work or use on existing doors.

Summary of the Invention

Accordingly, it is an object of the present invention to provide an inexpensive device which may be easily installed on an existing door, to thereby increase its strength so as to better withstand the impact forces of repeated striking by a person seeking to gain unauthorized entry by force.

Another object of the present invention is to provide an aesthetically pleasing door reinforcing plate adapted for placement over a marginal edge portion of the door which is only minimally visible when the door is viewed head on.

Another object of the present invention is to provide a door reinforcing plate which can be installed on the door without the requirement of difficult customization of the reinforcing plate or extensive modification of the door.

A further object of the invention is to provide a door reinforcing plate which extends only marginally onto the front and rear faces of the door, to reduce the lateral extent of the area of the door surfaces to be contoured necessary to recess the reinforcing plate into the door.

Another object of the present invention is to provide a door braced or reinforced by one reinforcing

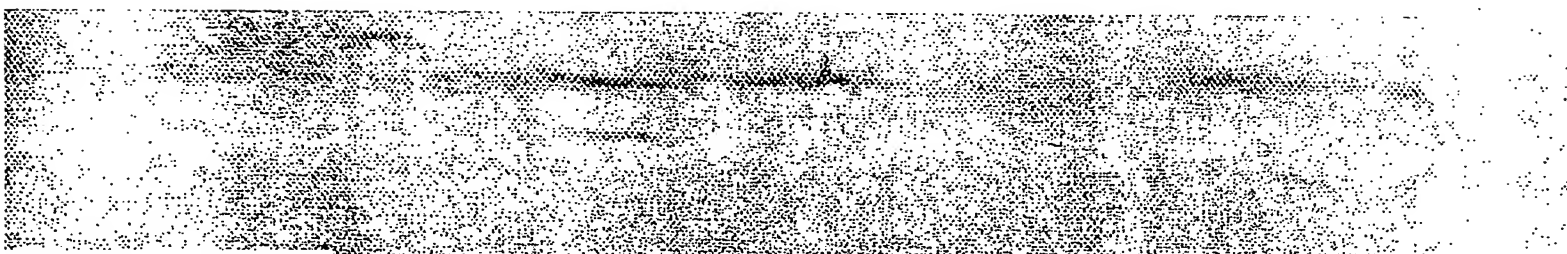


plate secured to the locking vertical edge portion of the door, which is adjacent the lock side of the door jamb when the door is closed and a second reinforcing plate secured to the hinged vertical edge portion of the door which is adjacent the hinge side of the door jamb.

A further object of the present invention is to provide a number of reinforcing plates which are adapted to be fastened to each of the edge surfaces of an existing door.

In a first embodiment, the invention provides a reinforcing plate secured by an adhesive over a locking or outward vertical edge surface of an entrance door. The outward edge surface is opposite the vertical edge surface of the door which is hingedly connected to the door jamb. The reinforcing plate extends along substantially the vertical length of the outward edge surface. The reinforcing plate is made of a rectangular sheet of metal, preferably brass, bent into a channel having a generally U-shaped cross section. The channel is formed having a generally rectangular central portion with generally rectangular front side and rear side portions extending at approximately a right angle therefrom. The central portion of the plate is sized to overlap and abut the doors outward edge surface, and the front and rear side portions are configured to abuttingly overlap only a

marginal portion of a respective front and rear face of the door immediately adjacent the outward edge surface. Openings in the central portion of the channel permit operative movement of the door locking latch and/or deadbolt therethrough, enabling the door to be locked.

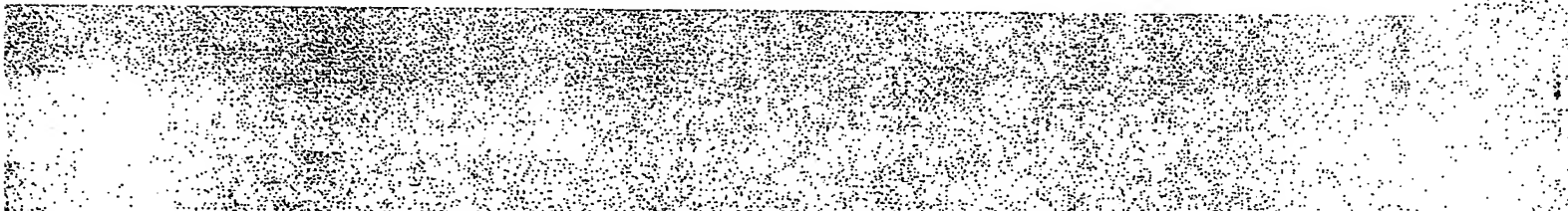
Preferably, prior to attachment of the reinforcing plate, contoured portions are first formed in each face of the door. The contoured portions comprising parts of the door wherein portions of the door are removed to form indentations in a respective door face. The front face contoured portion is made immediately adjacent and extending into the outward edge surface of the door. The front face contoured portion has substantially the same dimensions as the front side portion of the channel, and comprises an indentation having the same vertical and horizontal extent, and extends into the door face to a depth substantially the same as the thickness of the overlapping portion of the front side portion. Similarly, the rear contoured portion is made immediately adjacent and extending into the outward edge surface of the door. The rear face contoured portion has substantially the same dimensions as the rear side portion of the channel, and comprises an indentation having the same vertical and horizontal extent, and extends into the rear face a depth substantially the same as the thickness of the rear side portion of the reinforcing plate.

Preferably, the outward edge surface also includes an outward edge contoured portion which extends across the edge surface into both the front and rear faces of the door. The outward edge contoured portion comprises an indentation with the same vertical length and depth as the vertical length and thickness as the overlapping central portion of the reinforcing member. By providing a door with front and rear face and edge contoured portions, the door reinforcing plate may be secured to the door with exposed surfaces of the plate flush with adjacent door surfaces. As such, there is no increases in the overall dimensions of any part of the door and the door may be closed tightly against the door jamb in a normal manner.

In another embodiment the invention provides for a rectangular wooden door, having an inward vertical edge surface which is pivotally connected by hinges to the hinge side of a reinforced door jamb. The door pivotally moves about its inward vertical edge surface from a closed position wherein an outward vertical edge surface of the door opposite the inward vertical edge surface is immediately adjacent to the lock side of the door jamb, to an open position with the outward vertical edge surface remote from the door jamb. A rigid metal U-shaped reinforcing plate having a central base and two sides extending therefrom is permanently attached over

substantially the entire length of the outward vertical edge surface, with the base abutting the outward edge surface and a first side of the plate overlapping one of the front or rear faces of the door and the second side of the plate overlapping the other of the front and rear faces. The outward edge surface of the door carries a deadbolt and latch which are operatively movable through complimentary openings formed in the central base portion into a complimentary deadbolt strike plate and latch strike plate formed in the lock side of the door jamb.

Preferably, additional rigid metal U-shaped reinforcing plates, each having a rectangular central base and front and rear sides extending at right angles therefrom, are similarly secured to at least one of the inward vertical edge surface, the upper horizontal edge surface and the lower or bottom horizontal edge surface of the door. Each reinforcing plate preferably extends substantially the length of the respective edge surface which it overlaps, with a central base of each plate abutting a respective edge surface and the front and rear side of each reinforcing plate abuttingly overlapping the respective front or rear face of the door. The reinforcing plate secured to the inward vertical edge surface of the door including hinges formed integral therewith, for pivotal connection of the door to the hinge side of the door jamb.



Accordingly, in a first aspect this invention resides in providing a door in combination with a reinforced door jamb, wherein said door comprises, a generally rectangular panel having front and rear faces, a first edge surface and a second edge surface, said second edge surface is pivotally connected to said door jamb, door locking means movable within a bore in said first edge surface for locking said door in a closed position, a first reinforcing member secured to said first edge surface and comprising a thin elongate rectangular angled plate formed of rigid material extending substantially the length of said first edge surface, said angled plate including a base portion for abutting placement against said first edge surface, and a thin elongate first side portion abutting one of said front and rear faces, said base portion having an opening aligned with said bore, said opening sized to permit movement of said locking means therethrough.

In another aspect, this invention resides in a method of reinforcing a wooden entrance door with a reinforcing member, said door comprising, a generally rectangular wooden panel having front and rear faces, a first edge surface and a second edge surface opposite said first edge surface, said second edge surface having means for pivotal connection of said door to said door jamb,

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door locking means movable within a bore in said first edge surface for securing the door in a closed position, said reinforcing member comprising a thin elongate metal channel, said channel being generally U-shaped in cross-section and extending substantially the length of said first edge surface, and including a central base portion, a thin elongate first side portion, and a thin elongate second side portion, said base portion having an opening complimentary and sized to permit operative movement of said locking means therethrough, said method including the steps of, aligning said reinforcing member over said first edge surface with said opening over said bore and said first side portion abutably overlapping said front face, said second side portion abutably overlapping said rear face and said central rectangular portion abutting said first edge, and securing said a reinforcing member to said first edge surface.

Brief Description of the Drawings

Further objects and advantages will become apparent from the following description taken together with the accompanying drawings in which:

Figure 1 is a perspective view of a door having a reinforcing plate secured thereto in accordance with a first embodiment of the present invention;

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Figure 2 is a partial perspective view of the door reinforcing plate of Figure 1;

Figure 3a is a cross-sectional top view of Figure 1 along section II-II¹;

Figure 3b is a cross-sectional view of another embodiment of the door reinforcing plate in accordance with the present invention; and

Figure 4 is an exploded view of a door jamb assembly having reinforcing plates secured thereabout in accordance with a third embodiment of the invention.

Detailed Description of the Drawings

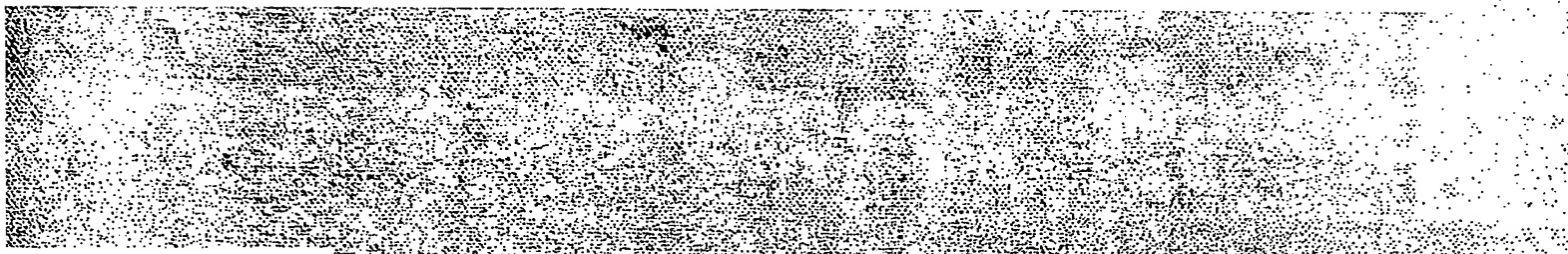
Reference is now made to Figure 1 which shows a rectangular wooden door 10 having a front face 12 and a rear face 14. An inward vertical edge surface 16 of the door 10 is operatively pivotally secured to the hinge side of a door jamb 30 in a known manner by hinges (not shown).

A door lock 20 consisting of a tumbler 22, a sliding bolt 24 and a latch 25 is installed in the door 10, near an outward vertical edge surface 26 of the door 10 which is opposite the inward edge surface 16. The bolt 24 and latch 25 are received and slidable within a respective horizontal bore 28a, 28b formed in the outward edge surface 26.

A reinforcing plate 34 is permanently secured to the door 10, substantially covering the outward edge surface 26. The reinforcing plate 34 is preferably made of a metal, such as brass, and is rigid so as to brace the door 10 and to dissipate the impact forces along its length, such forces caused by a person striking the door.

In the preferred embodiment shown in Figures 2 and 3a, the reinforcing plate 34 is elongated in a longitudinal direction extending substantially the vertical length of the outward edge surface 26. The plate 34 is formed into a channel having a generally U-shaped cross-section with an elongated rectangular central portion or base 36 which is delineated from rectangular front side 38 and a rectangular rear side 40 by two spaced apart parallel fold lines 42,44. Each fold line 42,44 is parallel to a lengthwise edge of the reinforcing plate 34.

The base 36 is sized to permit its overlapping placement abutting the outward edge surface 26, having a width which is complimentary to the width of the outward edge surface 26. Openings 46a, 46b are provided through the base 36 complimentary to the horizontal bore 28a and 28b, respectively. Each opening 46a, 46b sized to permit movement of a respective bolt 24 and latch 25 therethrough.



Both the front and rear sides 38,40 are coterminous with the base 36 in the longitudinal direction, and extend generally perpendicular from the plane of the base 36 inwardly towards the inward edge surface 26. Each of the front and rear sides 38,40 are sized so as to overlap only the marginal portion of a respective front and rear face 12, 14 adjacent the outward edge surface 26. The front and rear sides 38,40 typically extend less than 4 cm in the horizontal direction.

In the preferred embodiment shown in Figure 3a, there is no increase in the overall dimensions of the door 10 when the reinforcing plate 34 is secured thereto. To achieve this, the outward edge surface 26 includes an edge surface contoured portion 48. The edge surface contoured portion 48 is an indentation in the outward edge surface 26 which extends across the width of the outward edge surface 26 into the front and rear faces 12, 14, and has a depth and length corresponding to a respective thickness and length of the overlapping portion of the base 36 of the reinforcing panel 34. The front face 12 includes a contoured portion 50 immediately adjacent and extending into the outward edge surface 26. The front face contoured portion 50 is an indentation in the door 10 having a length, width and depth substantially the same as the respective vertical length, horizontal width and

thickness of the overlapping front side 38 of reinforcing plate 34. The rear face 14 includes a rear face contoured portion 52 which is immediately adjacent to and extends into the outward edge surface 26. The rear face contoured portion 52 is an indentation in the door 10 having a length, width and depth substantially the same as the respective vertical length, horizontal width and thickness of the overlapping rear side 40 of reinforcing plate 34.

The reinforcing plate 34 is secured to the door 10 with the opening 46a aligned with the bore 28a and opening 46b aligned with the bore 28b, thereby permitting the respective bolt 24 and latch 25 to slidably move therethrough.

As shown best in Figure 3a the reinforcing plate 34 is secured to the door 10 with the base 36 abutting and overlapping the edge surface contoured portion 48 of the outward edge surface 26. The front side 38 overlaps and abuts the front face contoured portion 50 such that the visible surface of the front side 38 is substantially coplanar with the portion of the front face 12 immediately adjacent the front face contoured portion 50. The rear side 40 overlaps and abuts the rear face contoured portion 52 such that the visible surface of the rear side 40 substantially coplanar with the portion of the rear face 14 immediately adjacent the rear face contoured portion 52.

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As is to be appreciated, with the contoured portions 48,50,52 having substantially the same dimensions as the reinforcing plate 34, the visible outermost surfaces of the reinforcing plate 34 will be coplanar with adjacent surfaces of the door 10. Accordingly, there is no change in the overall dimensions of the door and the door 10 may be closed tightly flush with the door jamb 30 to minimize drafts causing heat loss in winter and cooling in summer.

When closed, the latch 25 extends outwardly from outward edge surface 26 to engage a complimentary latch strike plate (shown as 31 in Fig. 4) formed in the lock side of the door jamb 30. Moving the tumbler 22 by turning a key moves the bolt 24 to a locked position, extending outwardly from the plane of the outward edge surface 26 to engage a complimentary deadbolt strike plate (shown as 32 in Fig. 4) in the door jamb 30. Preferably the deadbolt strike plate 32 is reinforced by means of having a metal construction and formed integral with the door jamb 30, or alternatively by an overlying metal plate secured about the face of the door jamb 30, additional bracing or the like.

To permanently attach the reinforcing plate 34 to the door 10, contoured portions are formed by removing material from the outward edge surface 26 and front and

rear faces 12, 14 of the door to form indentations. The indentations may be easily made by an electric circular saw, an electric router or any other known technique. The plate 34 is secured by any suitable means. Possibly an adhesive is next applied to the contoured edge surface 48, front face contoured portion 50 and rear face contoured portion 52. The reinforcing plate 34 is positioned over the outward edge surface 26 with the base 36 of the reinforcing plate 34 abutting against the outward edge surface 26 and openings 46a, 46b aligned with bores 28a, 29b respectively, the front side 38 abuttingly overlapping the front face contoured portion 50 and the rear side 40 abuttingly overlapping the rear face contoured portion 52. The reinforcing plate is clamped in such a position until the adhesive sets to permanently bond the plate 34 to the door 10.

Reference is now made to Figure 3b which shows a reinforcing plate 84 in accordance with a second embodiment of the present invention. The reinforcing plate 84 is adapted to be secured about the outward edge surface 76 of the door 60 in a manner similar to that of the reinforcing plate 34 shown in Figure 3a.

As with the first embodiment, the reinforcing plate 84 is elongated in a longitudinal direction and extends substantially the vertical length of the outward

edge surface 76. The reinforcing plate 84 is formed into an elongate channel having a generally U-shaped cross-section including a generally rectangular flat base 86, a front side 88 and a rear side 90.

The plate 84 is formed of a cast metal construction with each of the front and rear side 88, 90 extending generally perpendicular from the plane of the base 86 towards the inward edge surface of the door (not shown). Each of the front and rear sides 88, 90 has a tapered edge 88a, 90a and a perpendicular edge 88b, 90b, and reduces in thickness in the inward direction.

As with the first embodiment, openings in the base, (not shown), are sized and complimentary to various latch and bolt mechanisms slidably received within bores formed in the outward edge surface 76.

The preferred embodiment of Figure 1 shows a door 10 having one bolt 24 and one latch 25 slidable within respective bores 28a, 28b through corresponding openings 46a, 46b formed in the reinforcing plate 34. It is to be appreciated that any number or combination of latches and or bolts, together with corresponding openings may be provided.

Reference is now made to Figure 4 which shows a third embodiment of a door in accordance with the present invention. As with the first embodiment, the door 110

comprises a rectangular panel of wood having a front face 112, and a rear face 114. The door 110 is defined by four edge surfaces, an inward vertical edge surface 116, and outward vertical edge surface 126 opposite the inward surface 116, an upper horizontal edge surface 160 and a bottom horizontal edge surface 162.

A door lock mechanism 120 comprising a tumbler 122, a sliding bolt and a latch (not shown) is installed in the door near the outward edge surface, with the bolt and latch slidable within bores formed within the outward edge surface 126.

A reinforcing plate 134 identical to the reinforcing plate of the first embodiment is secured over the outward edge surface 126 in the manner previously described.

A second reinforcing plate 164 elongated in a longitudinal direction and extending substantially the length of the inward edge surface 116 is permanently secured over the inward edge surface. The second reinforcing plate 164 is in the form of an elongate channel having a U-shaped cross-section, comprising a rectangular base 166, and rectangular front and rear sides 168, 170. Each of the base 166, and front and rear sides 168, 170 have substantially the same construction as the respective base, front side and rear side of reinforcing

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plate 134. Rather than openings, the base 166 includes hinges 118a, 118b, 118c formed integral therewith which are used to operatively pivotally connect the door 110 to the hinge side of the door jamb 130a.

As shown in Figure 4, the door preferably has attached thereto a top reinforcing plate 172 secured over substantially all of the upper edge surface 160, and a bottom reinforcing plate 174 secured over substantially all of the bottom edge surface. Each of the top and bottom plates 172, 174 are formed into an elongate channel having a generally U-shaped cross-section.

The top reinforcing plate 172 comprises a rectangular central base 176 delineated from rectangular front side 180 and a rectangular rear side 184 by two parallel spaced apart fold lines, having generally the same configuration as the reinforcing panel of the first embodiment.

Both of the front and rear sides 180, 184 are coterminous in the lateral direction with the base 176. The front and rear sides 180, 184 extend generally perpendicular downwardly from the plane of the base 176, towards the bottom edge surface 162. Each of the front and rear sides 180, 184 is sized to overlap only the marginal portion of a respective front and rear face 112, 114 adjacent the top edge surface 160.

The bottom reinforcing plate 174 is configured substantially the same as top plate 172, having a central base 178, front side 182 and rear side 186.

Both of the bottom reinforcing plate front and rear sides 182, 186 are coterminous in the lateral direction with the base 178. The front and rear sides 182, 186 extend generally perpendicular from the plane of the base 178, upwardly toward the upper edge surface 160. Each of the front and rear sides 182, 186 is sized to overlap only the marginal portion of a respective front and rear face 112, 114 which is adjacent the bottom edge surface 162.

A prototype door was constructed in accordance with the first embodiment of the invention.

A solid wood cedar door having recessed "decorative" panels was provided, measuring 81.3 cm in width with a vertical height of 200.7 cm and a thickness of 4.5 cm. The door was pivotally hung by 10.2 cm hinges secured to an inward vertical edge of the door and the hinge side of the door jamb by 7.2 cm screws. A door lock consisting of a non-locking door knob-latch combination and a deadbolt was installed near the outward vertical edge surface of the door, opposite the inward edge surface. The latch was located 84.5 cm upward from the bottom edge of the door. The latch was slidably received

in a bore in the outward edge surface formed to a depth of 7 cm inward towards the inward edge surface. The deadbolt was located 98.4 cm upward from the bottom edge of the door. The deadbolt was slidably received in a bore in the outward edge surface formed to a depth of 7 cm towards the inward edge surface.

A generally U-shaped metal reinforcing plate of 32 gauge polished brass having an outside measurement of 4.5 cm and a length of 195.6 cm was used to reinforce the door. The reinforcing plate was secured to the door by means of an adhesive, positioned in accordance with the first embodiment. The reinforcing plate included rectangular front and rear side portions each of which extend generally perpendicular from a rectangular center portion. The front and rear side portions extended 2.5 cm across an adjacent marginal portion of a respective front and rear face of the door. One inch holes stamped from the center portion of the plate were centered 81.3 cm and 94.2 cm from the bottom of the door.

The door jamb was made from 3.2 cm by 11.6 cm pine with finger joints. An extruded aluminum sill with poplar substrate and a vinyl thermal break completed the frame about the door. The door jamb was reinforced by attaching thereto by means of 7.6 cm screws, a 32 gauge polished brass door jamb plate measuring 201.9 cm long by

5.1 cm with a .6 cm 90° bend. The door jamb plate was stamped for a standard strike plate at 85.1 cm center from bottom and a deadbolt strike plate 99.1 cm center from the bottom.

With the door secured to the door jamb and locked, the reinforced door was tested by impacting on a lock stile 7.6 cm above the deadbolt keyway, a 45 kg door ram having a 15.2 cm diameter hemispherical head, as per ASTM Standard F476-84. Table 1 indicates the amount of energy delivered in each test. Table 2 shows the results of the impact test using both door reinforced in accordance with the first embodiment of the present invention and a non-reinforced conventional wooden door.

Table 1

<u>Grade</u>	<u>Requirement</u>
10	2 blows of 80J (59 ft.lbf)
20	Grade 10 plus 2 blows of 120J (89 ft.lbf)
30	Grade 20 plus 2 blows of 160J (118 ft.lbf)
40	Grade 30 plus 2 blows of 200J (148 ft.lbf)

Table 2

<u>GRADE</u>	<u>Non-Reinforced Conventional Door</u>	<u>Wooden Door Having Reinforcing Plate</u>
10	- door cracked, but did not open	- crack in door jamb behind bolt strike plate. No other damage. Door secure.

Table 2

<u>GRADE</u>	<u>Non-Reinforced Conventional Door</u>	<u>Wooden Door Having Reinforcing Plate</u>
20	-a) first blow - large piece of wood removed around deadbolt and latch -b) second blow - door opens	- no further damage/ Door secure
30	----	- no further damage/ Door secure
40	----	- no further damage/ Door secure

Further testing revealed the door reinforced in accordance with the present invention began to fail at an impact of 240J (177 ft.lbf) with the result that at 280J (207 ft.lbf) to door split where the locked stile meets the recessed panels of the door, and the brass on the door and door jamb starting to deform. However, at 280J the door still could not be opened.

The results of the test when compared with the similar test on the unreinforced door, showed that the door having the reinforcing plate in accordance with the first embodiment of the invention withstood three and one half times the impact force as the unreinforced door.

While the preferred embodiments show a reinforcing plate 34 made of brass, it is to be appreciated other metals such as bronze, steel, copper and aluminum are equally suitable. Similarly, while metal is

given as a suitable rigid material, it is to be readily appreciated other rigid materials such as fiberglass, carbon reinforced composites etc. are equally useful.

The preferred embodiments disclose an adhesive as a means of fastening the reinforcing plates to the door. While less preferred the fastening means could comprise screws driven through slots formed in the base portion of the reinforcing plate. Alternately, other combinations of fastening devices could equally be employed and will be readily apparent to persons skilled in this art.

Although the disclosure describes and illustrates a preferred embodiment of the invention, it is to be understood that the invention is not limited to this particular embodiment. Many variations and modifications will now occur to those skilled in the art. For a definition of the invention, reference is made to the appended claims.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A door in combination with a reinforced door jamb, wherein said door comprises,

a generally rectangular panel having front and rear faces,

a first edge surface and a second edge surface, said second edge surface is pivotally connected to said door jamb,

door locking means movable within a bore in said first edge surface for locking said door in a closed position,

a first reinforcing member secured to said first edge surface and comprising a thin elongate rectangular angled plate formed of rigid material extending substantially the length of said first edge surface,

said angled plate including a base portion for abutting placement against said first edge surface, and a thin elongate first side portion abutting one of said front and rear faces,

said base portion having an opening aligned with said bore, said opening sized to permit movement of said locking means therethrough.

2. A door as claimed in claim 1 wherein said angled plate includes a thin elongate second side portion abutting the other of said front and rear faces.

3. A door as claimed in claim 2 wherein said reinforcing member is generally U-shaped in cross-section.

4. A door as claimed in claim 3 wherein said front and rear faces include respective front and rear contoured portions adjacent said first edge surface,

said contoured portions having substantially the same dimensions as the dimensions of a respective abutting first and second side portion.

5. A door as claimed in claim 4 wherein said reinforcing member comprises a metal selected from the group consisting of brass, bronze, steel, copper and aluminum.

6. A door as claimed in claim 5 wherein said door comprises wood.

7. A door as claimed in claim 6 wherein said reinforcing member is secured to said door by means of an adhesive.

8. A door as claimed in claim 7 wherein said door further comprises a second reinforcing member fixedly secured to said second edge surface,

said second reinforcing member comprising a thin elongate rectangular angled plate formed of metal extending substantially the length of said second edge surface,

said second reinforcing member including a second member base portion abutting said second edge surface, a second member first side portion abutting said front face, and a second member second side portion abutting said rear face,

said second reinforcing member having hinge means formed integral therewith for pivotally connecting said door to said door jamb.

9. A door as claimed in claim 8 wherein said door includes,

a front face second edge contoured portion adjacent said second edge surface and having substantially the same dimensions as said second member first side portion, and

a rear surface second edge contoured portion adjacent said second edge surface and having substantially

the same dimensions as said second member second side portion.

10. A door as claimed in claim 9 wherein said second reinforcing member comprises a metal selected from the group consisting of brass, bronze, steel, copper and aluminum.

11. A door as claimed in claim 10 wherein said second reinforcing member is secured to said door by means of an adhesive.

12. In a generally rectangular wooden entrance door for use with a reinforced door jamb, said door having front and rear faces and a door locking mechanism, the improvement comprising a door reinforcing member secured to a first edge portion of said door, wherein

said first edge portion includes a first edge surface and an adjacent portion of each of said front and rear faces,

said first edge portion opposite a second edge portion of said door, said second edge portion is pivotally connected to said door jamb,

said said locking mechanism includes bolt means movable within a bore in said first edge surface for locking said door in a closed position,

said reinforcing member comprises a thin elongate channel means formed of metal, said channel means is generally U-shaped in cross-section and extends substantially the length of said first edge surface,

said channel means includes a central rectangular base portion abutting said first edge surface, a thin elongate first side portion abuttingly overlapping said adjacent portion of said front face, and a thin elongate second side portion abuttingly overlapping said adjacent portion of said rear face,

said base portion having an opening aligned with said bore, said opening sized to permit movement of said bolt means therethrough.

13. A door as claimed in claim 12 wherein

said adjacent portion of said front face includes a front face contoured portion having substantially the same dimensions as said first side portion, and

said adjacent portion of said rear face includes a rear face contoured portion having substantially the same dimensions as said second side portion.

14. A door as claimed in claim 13 wherein said reinforcing member is selected from the group consisting of brass, bronze, steel, copper and aluminum.

15. A door as claimed in claim 14 wherein said reinforcing member is secured to said door by means of an adhesive.

16. A method of reinforcing a wooden entrance door with a reinforcing member, said door comprising,

a generally rectangular wooden panel having front and rear faces,

a first edge surface and a second edge surface opposite said first edge surface, said second edge surface having means for pivotal connection of said door to said door jamb,

door locking means movable within a bore in said first edge surface for securing the door in a closed position,

said reinforcing member comprising a thin elongate metal channel, said channel being generally U-shaped in cross-section and extending substantially the length of said first edge surface, and including a central base portion, a thin elongate first side portion, and a thin elongate second side portion,

said base portion having an opening complimentary and sized to permit operative movement of said locking means therethrough,

said method including the steps of,
aligning said reinforcing member over said first edge surface with said opening over said bore and said first side portion abutably overlapping said front face, said second side portion abutably overlapping said rear face and said central rectangular portion abutting said first edge, and
securing said a reinforcing member to said first edge surface.

17. A method as claimed in claim 16 including a step preceding the step of aligning said reinforcing member over said first edge surface of,

forming a contoured front portion in said front face adjacent said first edge, said contoured front portion having substantially the same dimensions as said first side portion, and

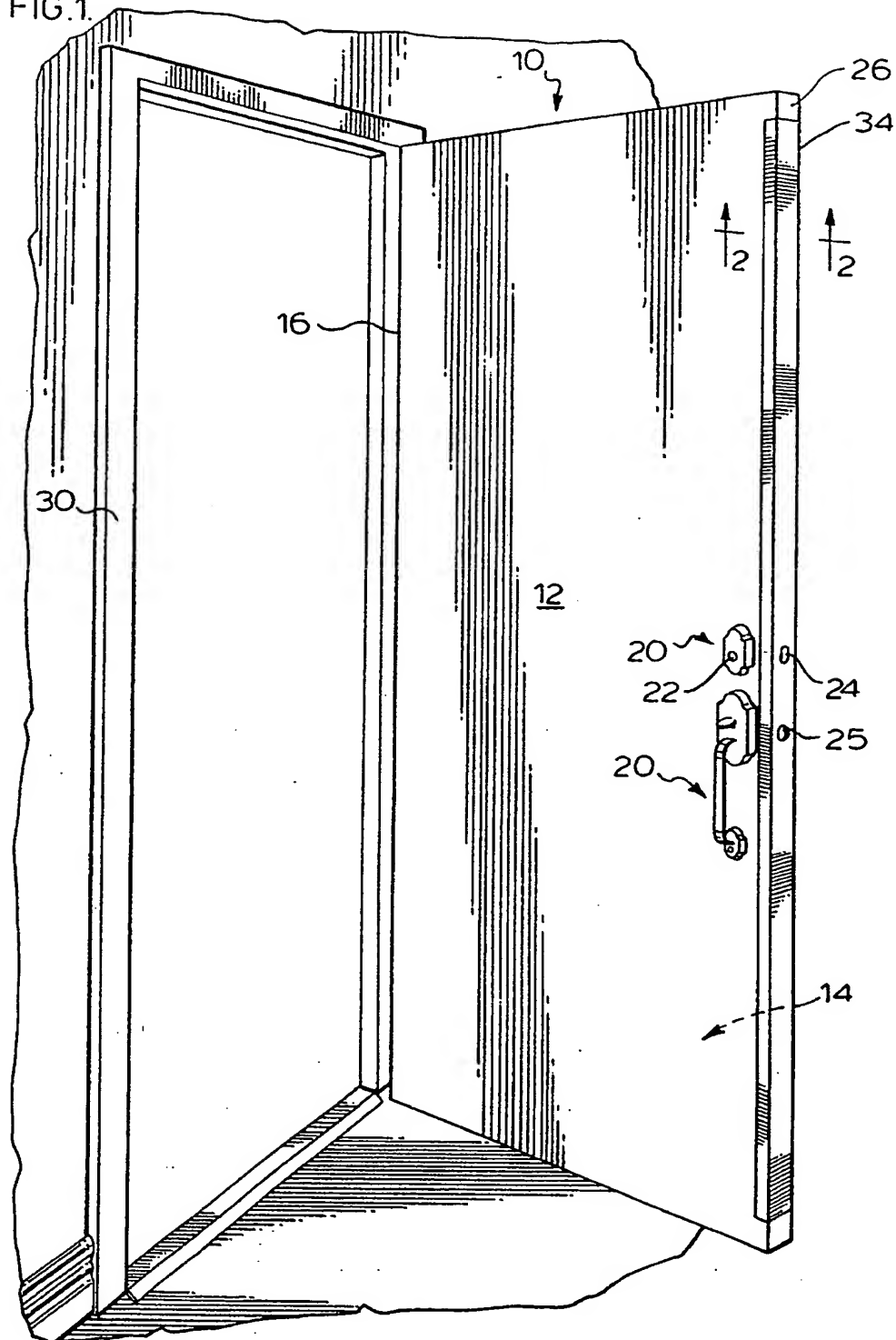
forming a contoured rear portion in said rear face adjacent said first edge, said contoured rear portion having substantially the same dimensions as said second side portion,

18. A method as claimed in claim 16 including the step of applying an adhesive to said first edge surface immediately prior to the step of aligning said reinforcing member over said first edge surface.

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19. A method as claimed in claim 17 including the step of applying an adhesive to said first edge surface immediately prior to aligning said reinforcing member over said first edge surface.

FIG. 1.



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FIG. 2.

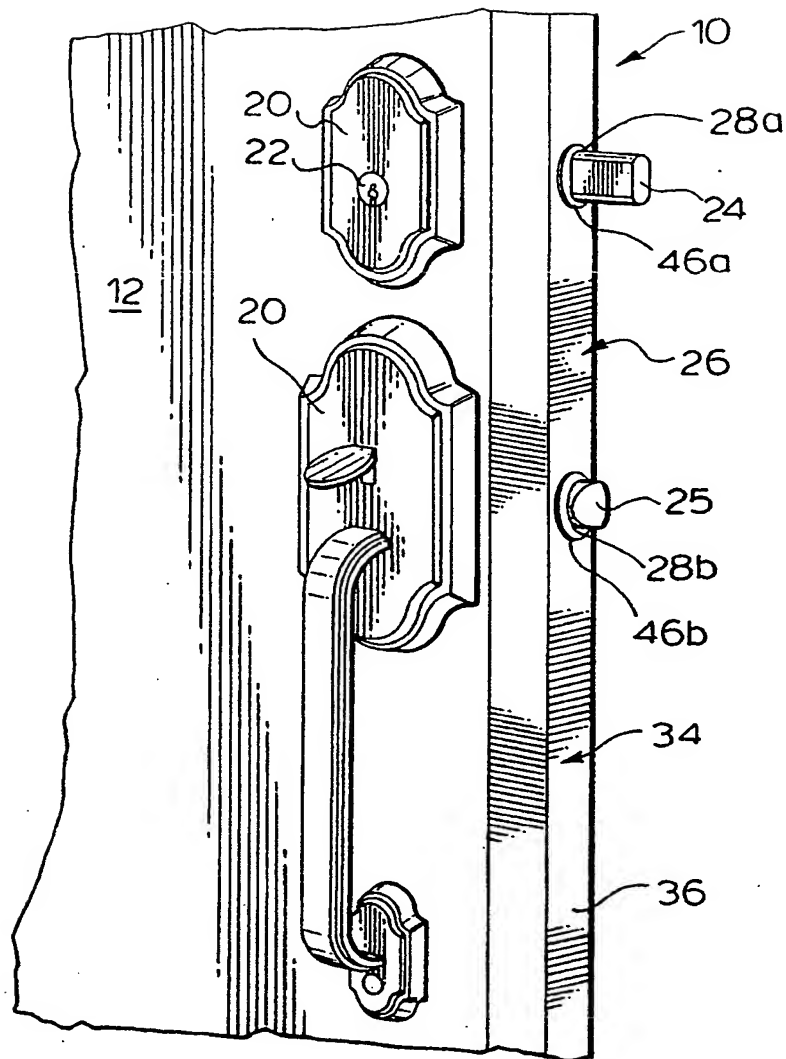


FIG. 3a.

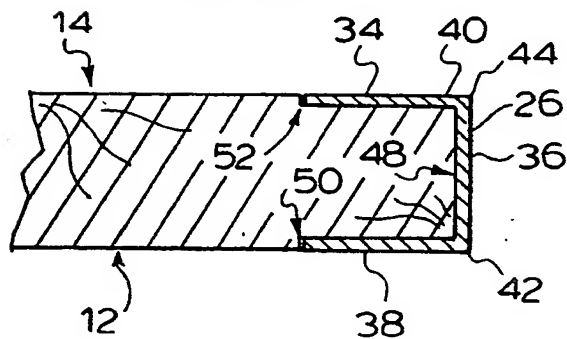
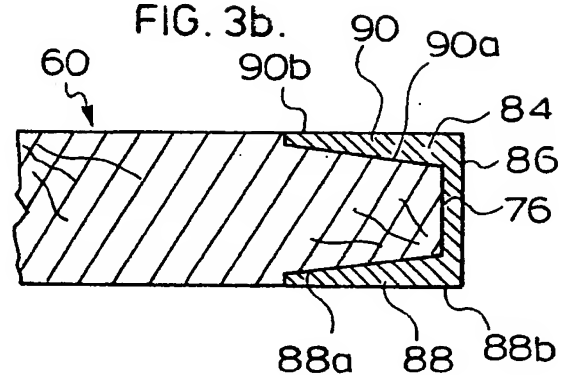


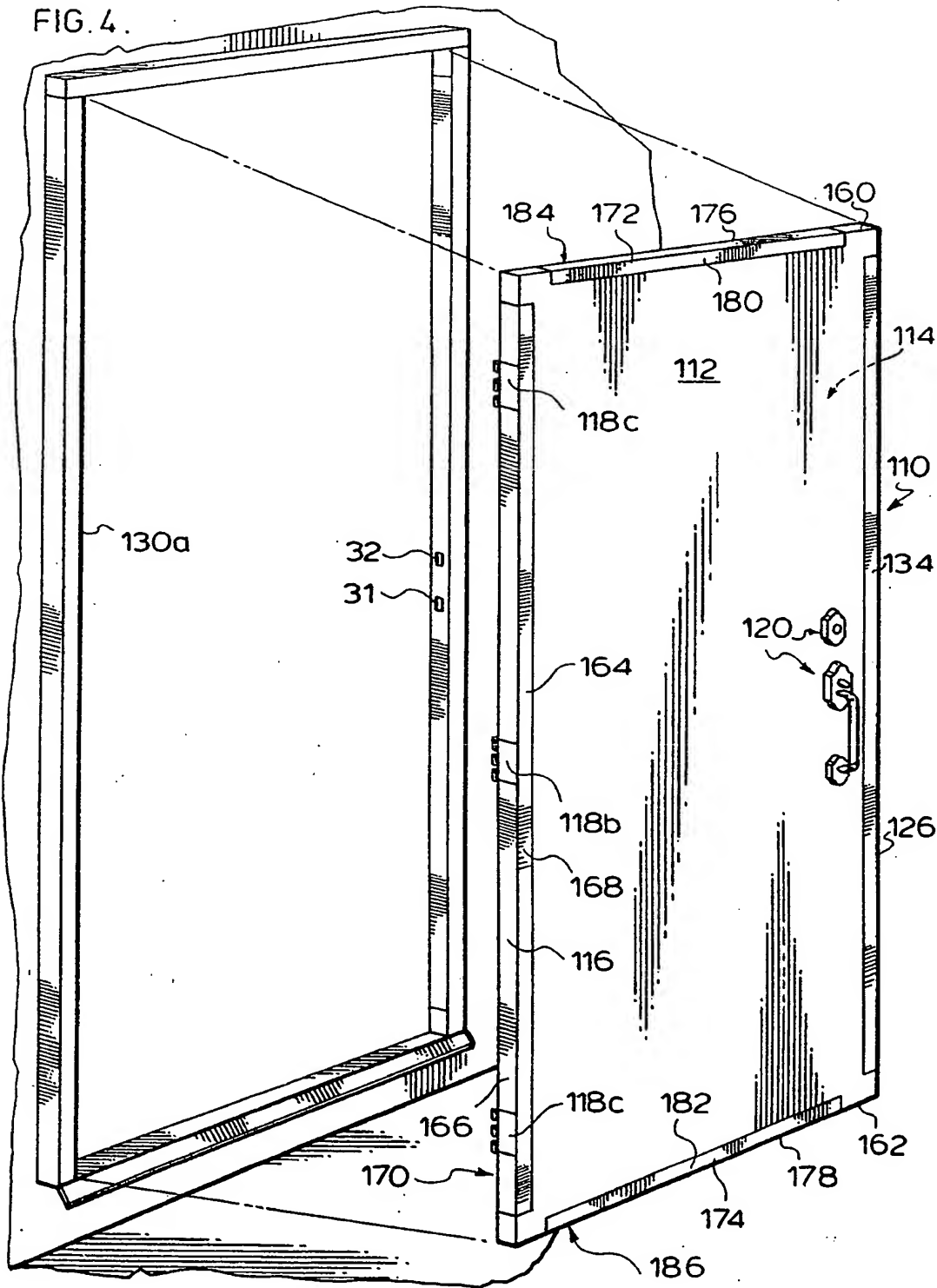
FIG. 3b.



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FIG. 4.



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